Kyoto University
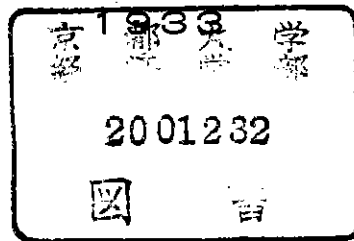# Economic Review

MEMOIRS OF

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IN

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SURVEY OF THE DISTRIBUTION OF THE PEOPLE'S INCOMES IN THE LIGHT OF THE HOUSEHOLD RATE.

CHAPTER 1. A GENERAL SURVEY.

The income tax affords the only datum for the study of the distribution of the people's incomes in Japan. In other words, the only method available for this study is to single the figures of C-class incomes out the income tax revenue statistics and see how these particular incomes are distributed among individuals or individual households. The C-class incomes, however, constitute only a small part of the revenues of the Japanese people. In an announcement made by the Statistical Bureau of the Cabinet, for instance, it is mentioned that of the total incomes of individuals for 1925, amounting to ¥12,900,000,000, the C-class incomes stood at ¥3,400,000,000.[1] If this estimate is correct, the people's earnings covered by the C-class incomes represent no more than 22.66 per cent. of the total revenue of the people. That is to say, a study of the distribution of the people's incomes, which is based on the C-class incomes, goes no further than the study of their distribution in regard to only one-fourth of the total incomes of the people.

That the C-class incomes constitute only one-fourth of the total incomes of the people may not vitiate the value of the study very seriously, if the number of individuals or households which get the C-class incomes constitute a large proportion of the population or households of the whole country. What, then, is the actual proportion of the households which pay the C-class income tax to the total number of the households in the country? Table No. 1 shows the figures for the 28 years from 1903 to 1930. The reason why in this table the tax-paying households, instead of in-

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1) Japan's national income in 1925 (the *Official Gazette* of November 31st, 1928).

Table No. 1.

Percentage of the C-class income tax paying households to the
total number of households in the country.[2]

Year.	Total households in the country.	C-class income tax paying households.	Percentage of C-class income tax paying households to the total number of households in the country.
1903	8,718,356	507,923	5.83
1904	8,737,851	543,048	6.21
1905	8,808,323	580,540	6.59
1906	8,983,839	638,390	7.11
1907	9,122,662	702,356	7.70
1908	9,239,813	860,047	9.31
1909	9,237,872	930,438	10.07
1910	9,365,682	947,578	10.12
1911	9,492,291	964,450	10.16
1912	9,620,259	1,013,545	10.54
1913	9,720,436	707,854	7.28
1914	9,842,701	727,089	7.39
1915	9,979,990	717,870	7.19
1916	10,106,049	712,580	7.05
1917	10,255,356	770,972	7.52
1918	10,469,616	779,480	7.44
1919	10,581,543	1,079,796	10.20
1920	10,833,475	994,194	9.18
1921	10,902,037	1,168,187	10.72
1922	11,131,014	1,280,916	11.50
1923	11,027,695	1,400,465	12.70
1924	11,282,307	1.389,916	12.32
1925	11,999,609	1,432,287	11.94
1926	11,704,182	804,419	6.87
1927	11,970,710	732,236	6.12
1928	12,224,998	693,808	5.68
1929	12,429,846	700,518	5.64
1930	12,705,896	677,870	5.34

2) The Annual Statistical Report of the Taxation Bureau.

dividual tax-payers, are given is that the number of in-
dividual C-class income tax payers is not of much value
for the study of the distribution of the people's incomes.
The investigation of the number of the C-class income tax
paying households made it necessary to make use of the
figures of the item "Numer of households" in the official
statistical tables, and such figures for the years prior to
1903 were not available. In Table No. 1, I have calculated
the percentage of the number of households throughout the
country. The "number of households" representing the
total number of the whole country does not necessarily
tally in definition with the "number of households" denoting
the C-class income tax paying households. But for the
purpose of ascertaining the general trend, I have sought the
proportion of both to each other.

Owing to changes in business conditions and to altera-
tions in the untaxable point (exemption), the percentage of
the C-class income tax paying households to the total number
of households throughout the country has been subject to
constant fluctuations. In the period of the 28 years under
review, the highest percentage recorded stood at 12.70%
and the lowest at 5.34%. Such being the case, in the study
of the distribution of the people's incomes, conducted on
the basis of the statistical figures of the C-class income tax
revenue, 87 to 96 per cent. of the total number of house-
holds in the country are inevitably left out of consideration.

Table No. 1 represents the figures for the whole nation,
but since, in this country, the circumstances ruling in the
six big cities are very different from those prevalent in all
other districts, it is necessary to study them separately.
Table No. 1 shows that, in 1930, 5.34 per cent. of the total
number of households throughout the country paid the C-
class income tax, but when divided into the six big cities
and all other districts, the figures in Table No. 2 are
obtained.

The population includes children, women and old people,
who, as a rule, get no incomes, and, moreover, the figures

Table No. 2.

Number of C-class tax paying households and that of individual tax-payers, as classified into the six big cities and other districts.[3]

	Number of house-holds.	Popula-tion.	C-class income tax payers.		Percentage of C-class income tax paying households.	Percentage of indivi-dual C-class income tax payers.
			House-holds.	Indivi-duals.		
Six big cities[4]	1,622,372	7,604,534	187,084	238,079	11.53%	3.13%
Other than six big cities	11,083,523	56,843,190	490,786	700,846	4.42%	1.23%

representing the individual tax-payers are of little value for the present study, so that my attention will here be confined to the percentage of the number of the C-class income tax paying households to the total number of households in the country. From Table No. 2, it will be seen that whereas in the six big cities over 11 per cent. of the total number of households is paying the C-class income tax, in the cities, towns and villages other than these six big cities, the per- centage of the C-class income tax paying households is only 4.42 per cent. In other words, whereas 11 households out of every 100 households are paying this income tax in the six big cities, only five out of every 100 households are paying it in the districts other than these six cities. Mr. Tadao Oda has made public the results of his study, in which the conclusions reached are the same as mine. His figures appear in Table No. 3.[5]

The percentage of the C-class income tax paying house-holds to the total number of households is 7.8% in the four

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3) The Annual Statistical Report of the Taxation Bureau.
4) The statistics of the Tokyo Taxation Superintendense Bureau.
   The statistics of the Osaka Taxatian Superintendence Bureau.
   The statistics of the Nagoya Taxation Superintendence Bureau.
5) The meaning of the income tax as a town levy (the *Town Pro-blems* Vol. 14, No. 6.)

Table No. 3.

Percentage of the C-class income tax paying households to the
total number of households in the country.

Cities.				Number of House-halds.	Number of C-class income tax paying house-holds.	Percentage of tax-paying households to the total number of households.
Six big cities with a population of over			600,000	1,629,333	187,886	11.5%
Three cities with a population of over 200,000				145,280	15,169	10.4
Seven	,,	,,	,, 150,000	248,089	25,314	10.2
Twelve	,,	,,	,, 100,000	302,436	28,499	9.4
Six	,,	,,	,, 90,000	121,606	10,403	8.6
Six	,,	,,	,, 80,000	99,636	9,679	9.7
Six	,,	,,	,, 70,000	93,356	7,704	8.8
Seven	,,	,,	,, 60,000	92,292	6,685	7.2
Twenty one	,,	,,	,, 50,000	224,479	18,179	8.1
Forteen	,,	,,	,, 40,000	123,503	10,011	8.1
Seventeen	,,	,,	,, 30.000	127,793	11,766	9.2
Four	,,	,,	,, 20.000	23,265	1,813	7.8
Total				3,231,068	333,108	10.3%

Note: The city of Fushimi is included in the city of Kyoto.

cities with a population of over 20,000 and 11.5% in the six
big cities boasting a population of over 600,000. The aver-
age percentage for all the cities is 10.3%. To take a general
view, the larger the population of the cities, the larger
percentage of their citizens pay the C-class income tax, and
vice versa, though exceptions to the rule are afforded by 14
cities with a population of over 40,000, seven cities with a
population of over 60,000, and six cities with a population
of over 90,000.

It is obviously impossible to elucidate the true aspects
of Japanese national life by a study of the distribution of
the incomes which represent only one fourth of the total
incomes of the whole nation and with which 80 or 90 per
cent. of the total households of the country—95 per cent.

of the total households in the districts other than the six
big cities—has nothing to do. But in default of better
materials for study, I have hitherto carried on my study
on the basis of the income tax revenues, though fully
awake to the defective nature of this method. It is neces-
sary to make up for this defectiveness by some means.
Various devices have been employed to this end, but none
has been found satisfactory. There is, indeed, no better
way, in the existing circumstances, than to have recourse
to the household rate for making good the above-mentioned
defectiveness.

Of what value are, then, the statistics of the household
rate in the study of the distribution of the people's incomes?
Let me explain it in the following chapters.

CHAPTER 2. MEANING OF INCOME IN THE HOUSEHOLD RATE.

The household rate has its origin in the Dajôkan Decree
providing for the local tax regulations, issued in 1878.
These regulations have gone through many vicissitudes since.
In 1921, the Prefectural Household Rate Regulations were
enacted, and in the following year the detailed rules for the
operation of the above-mentioned Regulations were pro-
mulgated. Then, for the first time was unified legislation
governing the household rate made in this country. Subse-
quently, in 1926, a law relating to local taxation was enacted
under which the household rate was abolished as a prefec-
tural tax and converted into a municipal, town and village
levy. In Article 22 of this law it is provided: " The
municipality, town or village can under this law impose a
household rate." Article 23 of the same law further says:
" The household rate is levied on a person who keeps house.
It can also be imposed on a person who, though not keeping
house, earns his own livelihood." The household rate is
assessed on the means of the subject of taxation, and the
basis of assessment is his income (over 80 per cent. of it)

and the state of his property (under 20 per cent. of it).
This is why the household rate is regarded as a sort of
income tax.

The incomes on which the household rate is assessed
are described in the following provisions of the regulations
for the enforcement of thé Law governing local taxation :—

Article 20. The amount of incomes, which forms the
basis of calculating the means of household ratepayers, is
worked out according to the rules given below :—

(1) The amount of revenue for the previous year in
regard to the interest on non-business loans and the interest
on public bonds, debentures, bank deposits and savings.

(2) The total amount of revenue for the previous year
minus the necessary expense in regard to forestry incomes.

(3) The amount of income from March 1st of the pre-
vious year to the end of February of the current year in
regard to bonuses, or allowances partaking of the nature of
a bonus.

(4) The amount of revenue from March 1st of the
previous year to the end of February of the current year
in regard to dividends of profits or interest, or shares in
the surplus accruing from juridical persons. With regard
to dividends on unregistered shares, however, the amount
received in the said period.

In case the amount received on account of the amortisa-
tion of shares or that received as refund of one's shares,
on retirement from one's company, exceeds the amount of
shares paid in or the amount of investments made, the
excess sum shall be regarded as dividend of profits received
from the juridical person concerned.

(5) The amount of income for the previous year in
regard to salaries, wages, annual allowances, annuities,
pensions and retirement allowances, and other grants of a
similar nature. With regard to such allowances, not re-
ceived continually from January 1st of the previous year,
the estimated amount of income for the current year.

(6) The total amount of revenue for the previous year

minus the necessary expense in regard to the incomes other than those falling under the foregoing items. With regard to the incomes from property, business or occupation, not accruing continually from January 1st of the previous year, the estimated amount of income for the current year.

Article 21.   The expenses to be deducted from the total revenue under items 1, 2 and 6 of the foregoing Article refer to the cost of purchasing seedlings, cost of buying silkworm eggs and fertiliser, cost of rearing cattle, etc., purchase cost of the stock-in-trade, cost of raw materials, cost of repairing business places or their rent, imposts on such places or business, wages for employees and other costs necessary for realising the revenue. Household expenses and other costs relating thereto shall not be deducted.

Again, the Regulations for the Enforcement of the Law governing local taxation carry the following two articles providing for deductions for assessment in favour of earned incomes and persons with dependants to support:

Article 23.   When the amount worked out in accordance with the provisions of from Article 20 to the previous Article is under ¥12,000, one-tenth shall be deducted in respect of the incomes from salaries, wages, annual allowances, annuities, pensions, retirement allowances, and bonuses and other kinds of pay analogous in nature to these ; when it is under ¥6,000, two-thirds ; when it is under ¥3,000 three-tenths ; when it is under ¥1,500, four-tenths ; and when it is under ¥800, five-tenths.

Article 24.   When the amount worked out in accordance with the provisions of from Article 20 to the previous Article is under ¥3,000 and the tax-payer has among the members of his household persons who were either under 14 years or over 60 years on the first day of the fiscal year, or persons who are deformed or disabled, the following deductions are made from his incomes in assessment, on application by the tax-payer :—

  1.   When the income is under ¥1,000, at the rate of ¥100 per head of persons under 14 years or over 60

years, or deformed or disabled persons.

2. When the income is under ¥2,000, at the rate of ¥70 per head of these persons.

3. When the income is under ¥3,000, at the rate of ¥50 per head of these persons.

By deformed or disabled persons mentioned in the foregoing paragraph are meant persons of mental derangement, deaf, dumb or blind persons, and persons who are either severely injured or afflicted with incurable diseases so that they require constant care and protection.

As will be seen from the above-mentioned Artieles, the methods of calculating the incomes for the assessment of the household rate are, on the whole, identical with those adopted in the assessment of the income tax, though, as Mr. Hirotaro Tanaka[6] points out, they are different in details. In six respects, they may be contrasted as follows ;—

(a) The household rate follows the lines of lump sum method taxation more closely than the income tax. For instance, in the household rate, the incomes accruing from interest on public bonds, debentures, bank deposits and savings, from property and business abroad, and from other earnings originating in foreign countries are considered collectively.

(b) Whereas under the Income Tax Law the incomes of the householder and those of the members of his family who live in the same house only are added up, in the household rate all the iucomes of those living with the ratepayer are added together for purposes of assessment, no matter whether they are members of the householder's family or not.

(c) Incomes exempted from taxation under the Income Tax Law, from the point of view of national policy, as, for example, the interest on national bonds, are taxed in the household rate.

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6) *The Commentary on the Municipal, Town and Village Household Rate*, pp. 106—108.

(d) In the household rate, unlike the C-class income tax, a 40 percent. deduction is not made on the dividends from juridical persons. Nor is there any qualification provision as to the application of the rates of taxation to forestry incomes.

(e) Deductions on earned incomes are graded more numerously and are higher in rates in the household rate.

(f) The provisions governing deductions on account of dependants of the family differ between the household rate and the income tax.

Setting apart the question of whether or no the assessment of incomes in the household rate is being performed smoothly, the standard of assessment covers a wider range than in the income tax, in so far as legal provisions are concerned.

In short, each municipality, town or village can levy the household rate on any person who keeps house or who, if not keeping house, is leading an independent life, and this rate is asressed mainly on the basis of the ratepayer's income. The methods of calculating incomes in this case are far better than those provided for in the Income Tax Law. If, therefore, we look into the state of the distribution of such incomes as are mainly considered in the assessment of the household rate, we can gain an accurate idea of the distribution of the incomes of the Japanese people. There are, however, two obstacles in the way.

The first obstacle is that in thirty-six cities and 188 towns and villages the household rate is not levied, the hause surtax, income surtax, the income tax or a substitute for the household rate being imposed instead.[7] Of a total of 109 cities in this country, the household rate was not in force in 36 cities in the fiscal year 1931—1932, and these cities were Muroran, Sendai, Maebashi, Takasaki, Chiba,

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7) *The Present State of the Substitute for the Household Rate and Its Revisions,* by Hyakuji Nagayasu. (Summary of the proceedings of the Third All-Japan Town Problems Congress, p. 62 downwards).

Tokyo, Hachioji, Yokohama, Yokosuka, Kawasaki, Toyama, Takaoka, Fukui, Hamamatsu, Nagoya, Toyohashi, Okazaki, Ichinomiya, Seto, Kyoto, Osaka, Sakai, Kobe, Himeji, Amagasaki, Akashi, Nishinomiya, Wakayama, Okayama, Kurashiki, Hiroshima, Tokushima, Wakamatsu, Yawata, Nagasaki and Kagoshima.[8] As the household rate is not, thus, adopted by many important cities, including the six big cities, the investigation of the distribution of the people's incomes on the basis of this particular rate naturally loses some of its value.

The second obstacle is that the household rate is not enforced so successfully as its drafters desired. As it is a municipal, town or village levy, the necessary investigations about its inposition may be conducted more thoroughly than in the case of national and prefectural taxes, but it is at the same time conceivable that the municipal, town and village authorities are not so adept as the tax official authorities in the technique of calculating incomes. When it is remembered that the tax offices are actually experiencing great difficulties in the assessment of incomes amenable to the national income tax, it is a matter of course that the municipalities, towns and villages are unable to make perfect inquiries into the incomes on which the household rate is levied, the investigation of which is admittedly more difficult.

But the ideal method of inquiry can never be found, so I have contented myself with the study of the state of the distribution of incomes, as reflected in the household rate imposed by the Kumamoto Municipality in the fiscal year 1931—1932, with my eyes wide open to the above-mentioned handicaps. My choice of the Kumamoto Municipality for this purpose was due to the fact that I could avail myself of the results of the study made by Mr. Môri, former Chief of the Kumamoto Tax Office, of the distribution of the incomes of the citizens of Kumamoto on the basis of the household rate—a research of which kind has never been

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8) Summary of Local Finance.

made in any other city. The following two chapters merely deal with the results of Mr. Môri's study.

CHAPTER 3.   THE KUMAMOTO MUNICIPALITY AND ITS HOUSEHOLD RATE.

The city of Kumamoto had an area of 2.43 square *ri* (one *ri* being 2.44 miles), a population of 164,449 and 32,383 households on October 1st, 1930. In point of population, it takes the fifteenth place among the cities of this country, its population being smaller than that of Kure, Sendai and Yawata but larger than that of Kanazawa, Otaru, Oka-yama, Kagoshima and Shidzuoka. In Kyushu, it takes the fourth rank, Fukuoka, Nagasaki, and Yawata occupying the first, second and third place respectively. It takes the precedence of Kagoshima, however. Among the Japanese cities where the household rate is levied, it is the fifth biggest city, Fukuoka being the biggest and then following in order Hakodate, Kure and Sapporo. With exclusive reference to the cities in Kyushu where the household rate is imposed, it is the second biggest city. Kumamoto is a principal city in Kyushu where many important local Government offices and educational institutions are located (as, for example, the Army Division headquarters, the local Chiho Saibansho, the Prefectural Office, the Communications Bureau, the Forestry Bureau, the local Monopoly Office, the Government Medical University, the Pharmaceutical College, the Fifth High School, and the Higher Technical School).[9] As a commercial and industrial city, it has the branches of big banks as well as a number of companies. It is a well-balanced city where occupations are comparatively evenly distributed among its citizens.

In order to make clear the economic conditions of the citizens of Kumamoto, the classified figures of the C-class incomes in that city for the fiscal year 1931—1932 are given in Table No. 4.

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9) Year Book of the Japanese Cities (the 1931 Edition).

Table No. 4.

Classified figures of C-class incomes in the city of Kumamoto
(for the fiscal year 1931—1932).

Kinds.	Number of persons	Amount of incomes
Fields { Cultivated by owners	73	¥ 20,153
Fields { Tenanted	575	267,695
Truck farms { Cultivated by owners	74	11,142
Truck farms { Tenanted	650	74,148
Rented residential land and houses	1.632	2,034,325
Stock-farming and sericulture	15	38,837
Industry	115	354,768
Commerce	2.021	2,756,535
Money-lending	221	672,922
Transport and communications	25	48,856
Amusements, entertainments and " service " business	283	694,851
Interest on non-business loans, deposits, etc.	763	287,520
Dividends	1.217	1,054,861
Salaries, wages and annuities	1.950	2,781,113
Bonuses	1.593	633,810
Various allowances	617	508,934
Miscellaneous trades	313	954,633
Labour	19	26,667
Forestry incomes	2	1,220
Other incomes	222	99,344
Total	12.380	13,322,335

Of all persons with such incomes, totalling 12,380, those
who derive their incomes from commerce are largest in
number (2,021), followed by those with incomes from
salaries, wages and annunities (1,950), landlords and house
owners (1,632), recipients of bonuses (1,593), persons with
incomes from fields and truck farms (1,372) and recipients
of dividends (1,217). In reference to the total income of
¥13,322,335, salaries, wages and annuities (¥2,781,113) stand
first on the list, and then come in order commerce (¥2,756,-

535), rented residential land and houses (¥2,034,325), dividends (¥1,054,861), miscellaneous trades (¥954,633); amusements, entertainments, and "service" trades (¥694,851). The statistical figures given in the above table gives a fairly good illustration of the economic life of the Kumamoto citizens. In view of this and other circumstances, it seems not altogether improper to study the state of the distribution of incomes on the basis of the household rate levied by the Kumamoto Municipality, nor does it seem difficult to infer the state of the distribution of incomes in other cities from the data supplied by that city. It may, of course, be hazardous, for various reasons, to infer the conditions in the whole country from the results of the statistical study of the state of things prevailing in a single city, but since the state of the distribution of the incomes of Government and public officials, shool teachers and petty company clerks in Kumamoto is comparatively typical, it may safely be applied to all cities in this country. Mr. B. Seebohm Rowntree, in the introduction in his book, "Poverty, a Study of Town Life," says: "At the outset I had to decide whether to collect information on the "extensive" method or on the "intensive." In other words, the choice lay between gathering together and analysing such statistics regarding towns in the United Kingdom as were to be found in Government Returns, Reports of Medicial Officers of Health, the records of the various branches of the Charity Organisation Society, etc., etc., or studying in detail the conditions of a single typical town. A very little inquiry sufficed to show that any picture of the condition of the working class of provincial England based on the former method would be very incomplete and of doubtful service." Instead of basing his study on the data secured from all sources in the country, he took the city of York as the subject of his study and made a detailed analysis of the conditions there. It seems that the method adopted by Mr. Rowntree is positively effectual in some cases. From such a point of view, I have studied the state of the distribution of incomes on the basis

of the household rate of the Kumamoto Municipality.

The household rate levied by the Kumamoto Municipality has some points of contrast as well as many points of similarity to that imposed by other municipalities, towns and villages. The main points of the household rate in Kumamoto are as follows :—

The main points of the household rate, a special levy of Kumamoto.

1. The household rate is imposed on any person, who, even if not keeping house, is leading an independent life.

2. The houshold rate is imposed on any person who had an income taxable on April 1st in each fiscal year. ·

3. The following are exempt from the household rate :—

   (a) Persons who receive public relief because of poverty (there were 100 households so circumstanced in Kumamoto in the fiscal year 1931–1932).

   (b) Workers and coolies who lodge together in dormitories or in the grounds of factories.

   (c) Students. Such students as keep house conjointly or have servants in their employ to do cooking for them are excepted.

   (d) Servants, geisha, prostitutes and waitresses who live with their employers or keepers.

   (e) Such persons as the Mayor deems too poor to be able to bear the household rate (there were 120 such households in Kumamoto in the fiscal year 1931–1932).

4. With regard to deductions on earned incomes, one-tenth is deducted when the total income is less than ¥12,000 ; two-tenths when it is less than ¥6,000 ; three-tenths when it is less than ¥3,000 ; four-tenths when it is less than ¥1,500 ; and five-tenths when it is less than ¥800.

5. With regard to deductions on dependants, the following deductions are made, on application by the ratepayer, when a family with an income of less than ¥3,000 has

inmates who are either under 14 or over 60 in age, or who are deformed or disabled :—

> (a) ¥70 per head, when the income is less than ¥1,000.
>
> (b) ¥50 per head, when the income is less than ¥2,000.
>
> (c) ¥35 per head, when the income is less than ¥3,000.

6. In the household rate, unlike the national income tax, the life insurance premium is not deducted.

CHAPTER 4. DISTRIBUTION OF THE INCOMES IN THE CITY OF KUMAMOTO.

In studying the distribution of the incomes of the city of Kumamoto, it may be apposite to recall the view of Vilfredo Pareto, the originator of Pareto's line, who made a valuable contribution to the study of the distribution of incomes.

1. In the general conclusion in his book "Cours d'economie politique," Pareto says: "It was induction that enabled us to know the form of the curve of incomes, while it was by deduction that we could induce two important theorems. One of these theorems is that the distribution of incomes is not accidental, and the other is that, for the lowest level of incomes to be elevated and for the inequality of incomes to be reduced, it is essential that wealth should increase more quickly than the population."

In his book, "Les Inégalités économiques," published in 1931, R. Gibrat, while criticising Pareto's principles in detail, stresses the necessity of correcting the figures of his rate of inequality in the cistribution of incomes. As it is not my intention to induce any definite principle, I will refrain from any comment on Pareto's two theorems, and confine myself to the elucidation of points relating to induction. In the following two respects, the distribution of the incomes in the city of Kumamoto bears on Pareto's theory :—

1.—Regarding the form of distribution in the lowest part of incomes and the part a little higher.[11]

2.—Regarding the distribution curve of earned incomes.[12]

Pareto's views on the above-mentioned points are as follows :—

Concerning the first point, he says : " With regard to *la pyramide sociale,* as nobody has yet offered an analytical explanation, it is difficult to affirm that it is just the same in countries where widely different conditions rule. A certain writer asserts, in the light of his theoretical concept, that the part near the base (which will be denoted hereafter by " s.t.v.") is of the form given in Graph No. 1, but no statistical figures are available to substantiate this assertion. It is more probable that this s.t.v. part will be of a very compressed form like the one shown in Graph No. 2. It is not a mere matter of curiosity to know what this part is like ; it is of great consequence to know how it is shaped. If the s.t.v. part of *la pyramide sociale* is very compressed, then the form of the part nearest to the base will be plane. If it is extremely compressed, a pyramidal form will result."
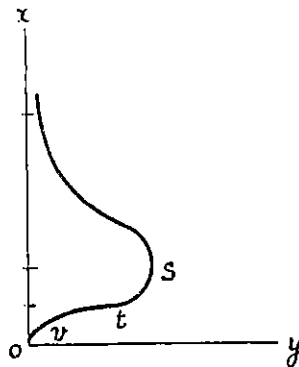
Graph No. 1.   Graph No. 2.
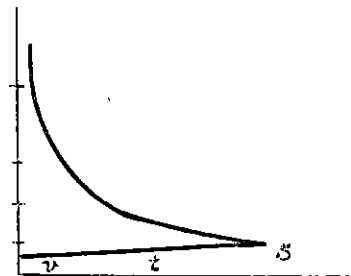
With reference to the second point, he says that al-though, as a rule, each line connecting the logarithmic

11) Vilfredo Pareto : Cours d'économie politique, pp. 314—315.
12) Cours. p. 308.

coordinates of the amounts of income and the number of persons (accumulative) who get incomes over each designated amount forms a straight line, the line is not straight, when earned incomes and incomes from movable property are considered separately from other incomes. He had, however, no ample data to prove this contention. His argument was based merely on the following tax statistics for Canton de Vaud in 1892.

Francs.	Incomes from movable property.	Incomes from immovable property.	Earned incomes.	Total.
1,250	3,524	386	2,162	5.900
2,500	1,786	172	804	2,693
5,000	885	69	241	1,172
10,000	389	23	69	471
20,000	137	10	29	171
40,000	42	5	16	63

He asserts that the graph of the incomes from movable property is convex, while that of the earned incomes is concave. But that of the sum total of these incomes and the incomes from immovable property forms a line which is practically straight, he avers.

2. I will proceed to examine the state of the distribution of incomes among the citizens of Kumamoto in the light of these arguments of Pareto's. There were 31,969 households in Kumamoto which paid the household rate in the fiscal year 1931—1932. As the total number of the households in that city was 32,383, practically all the households paid the rate. On the other hand, the households which paid the C-class income tax numbered 3,815, or only about 12 per cent. of the total number of the households. I will first direct attention to the C-class income tax paying households, and then to those paying the household rate.

As Table No. 5 shows, the C-class incomes totalled ¥12,107,350, while the number of households which paid the C-class income tax was 3,715.

Table No. 5.

Number of the C-class income tax paying households in Kumamoto
(in the fiscal year 1931–1932).

Grades.			Number of households.	Amount of income.
¥		1,200	143	171,600
Less	than	¥ 1,500	985	1,327,180
,,	,,	2,000	868	1,503,000
,,	,,	3,000	653	1,583,380
,,	,,	5,000	581	2,211,390
,,	,,	7,000	214	1,274,010
,,	,,	10,000	125	1,062,850
,,	,,	15,000	74	889,010
,,	,,	20,000	34	586,560
,,	,,	30,000	21	511,180
,,	,,	50,000	9	325,410
,,	,,	70,000	4	248,920
,,	,,	100,000	2	170,860
,,	,,	200,000	2	243,000
Total			3,715	12,107,350

Simpson's actual relative average difference η' in regard to the C-class incomes of the Kumamoto citizens for the fiscal year 1931–1932, worked out according to the formula :[13]

$$\eta' = \frac{2\{2(y_1 + y_3) + y_2 - 2 \cdot 5\}}{3}$$ is 0.879588. The related figures necessary for finding η' are :—

    (a) The first quartile of incomes (in Yen)x_1... 2.008

    (b) The median of incomes (in Yen) x_2......... 3.047

    (c) The third quartile of incomes (in Yen) x_3... 3.564

    (d) Percentage of men with incomes less than
        the first quartile y_1 .... 0.540512

13) Kumao Masuda: On the Method of Compiling the Statistics of the Income Distribution Rate (*The Anuual Report of the Economic Study* of the Osaka Commercial University).

L. von Bortkiewicz: Die Disparitätsmasse der Einkommensstatistik.

(e) Percentage of men with incomes less than
the median y_2.. 0.819650

(f) Percentage of men with incomes less than
the third quartile y_3.............................. 0.959354

3. Next, as to the distribution curve of the incomes of the citizens of Kumamoto, as revealed in the household rate. Table No. 6 shows the distribution of the total incomes.

Table No. 6.

Distribution of the total incomes of the citizens of Kumamoto
(in 1930).

Grades	Number of persons with graded incomes.	Number of persons with bigger incomes.	Grades	Number of persons with graded incomes.	Number of persons with bigger incomes.
Nil	3,463	31,969	¥ 2,000 „	108	1,364
¥1 & over	4,753	28,506	¥ 2,100 „	59	1,256
¥ 100 „	5,795	23,753	¥ 2,200 „	55	1,197
¥ 200 „	4,343	17,958	¥ 2,300 „	70	1,142
¥ 300 „	3,114	13,615	¥ 2,400 „	59	1,072
¥ 400 „	1,875	10,501	¥ 2,500 „	31	1,013
¥ 500 „	1,740	8,626	¥ 2,600 „	35	982 ·
¥ 600 „	1,263	6,886	¥ 2,700 „	26	947
¥ 700 „	779	5,623	¥ 2,800 „	28	921
¥ 800 „	520	4,844	¥ 2,900 „	19	893
¥ 900 „	438	4,324			
Total	24,620		Total	490	
¥ 1,000 „	456	3,888	¥ 3,000 „	20	874
¥ 1,100 „	386	3,430	¥ 3,100 „	32	814
¥ 1,200 „	367	3,044	¥ 3,200 „	22	822
¥ 1,300 „	306	2,677	¥ 3,300 „	22	800
¥ 1,400 „	262	2,371	¥ 3,400 „	25	778
¥ 1,500 „	214	2,109	¥ 3,500 „	18	763
¥ 1,600 „	161	1,895	¥ 3,600 „	13	735
¥ 1,700 „	130	1,734	¥ 3,700 „	14	722
¥ 1,800 „	131	1,604	¥ 3,800 „	10	708
¥ 1,900 „	109	1,473	¥ 3,900 „	16	698
Total	2,522		Total	192	

Grades	Number of persons with graded incomes.	Number of persons with bigger incomes.	Grades	Number of persons with graded incomes.	Number of persons with bigger incomes.
¥ 4,000 „	33	682	¥ 6,000 „	52	357
¥ 4,100 „	23	649	¥ 6,500 „	26	305
¥ 4,200 „	27	626	¥ 7,000 „	20	279
¥ 4,300 „	25	599	¥ 7,500 „	26	259
¥ 4,400 „	21	574	¥ 8,000 „	19	233
¥ 4,500 „	19	553	¥ 8,500 „	21	214
¥ 4,600 „	17	534	¥ 9,000 „	17	193
¥ 4,700 „	19	517	¥ 9,500 „	14	176
¥ 4,800 „	11	498	¥ 10,000 „	118	162
¥ 4,900 „	11	487	¥ 20,000 „	26	44
Total	206		¥ 30,000 „	8	18
			¥ 40,000 „	2	10
¥ 5,000 „	13	476	¥ 50,000 „	1	8
¥ 5,100 „	11	463	¥ 60,000 „	0	7
¥ 5,200 „	11	452	¥ 70,000 „	1	7
¥ 5,300 „	11	441	¥ 80,000 „	1	6
¥ 5,400 „	15	430	¥ 90,000 „	0	5
¥ 5,500 „	19	415	¥ 100,000 „	4	5
¥ 5,600 „	8	396	¥ 150,000 „	1	1
¥ 5,700 „	10	388	Grand total	31,969	
¥ 5,800 „	11	378			
¥ 5,900 „	10	367			
Total	119				

Remarks: (1) The classification in this table was made from the draft measure for the imposition of the household rate in Kumamoto for the fiscal year 1931–1932.

(2) The amount of incomes represents the balance of total incomes after due deductions have been made on account of dependants and earned incomes.

(3) The high proportion of the number with no income is due mainly to the deductions as mentioned in (2).

From Table No. 6 it will be seen that the total incomes of the citizens of Kumamoto are graded widely from nil to ¥150,000, but that peoyle with incomes of from ¥100 to ¥200 are most numerous. In the main, the distribution is

within the range of from ¥100 to ¥3,500. The results of the study made along the same lines in regard to the earned incomes, that is, the total earned incomes, incomes of Government and public officials, incomes of soldiers and sailors, incomes of educationists, incomes of company employees, and incomes of manual workers, are given in Table No. 7.

Table No. 7.

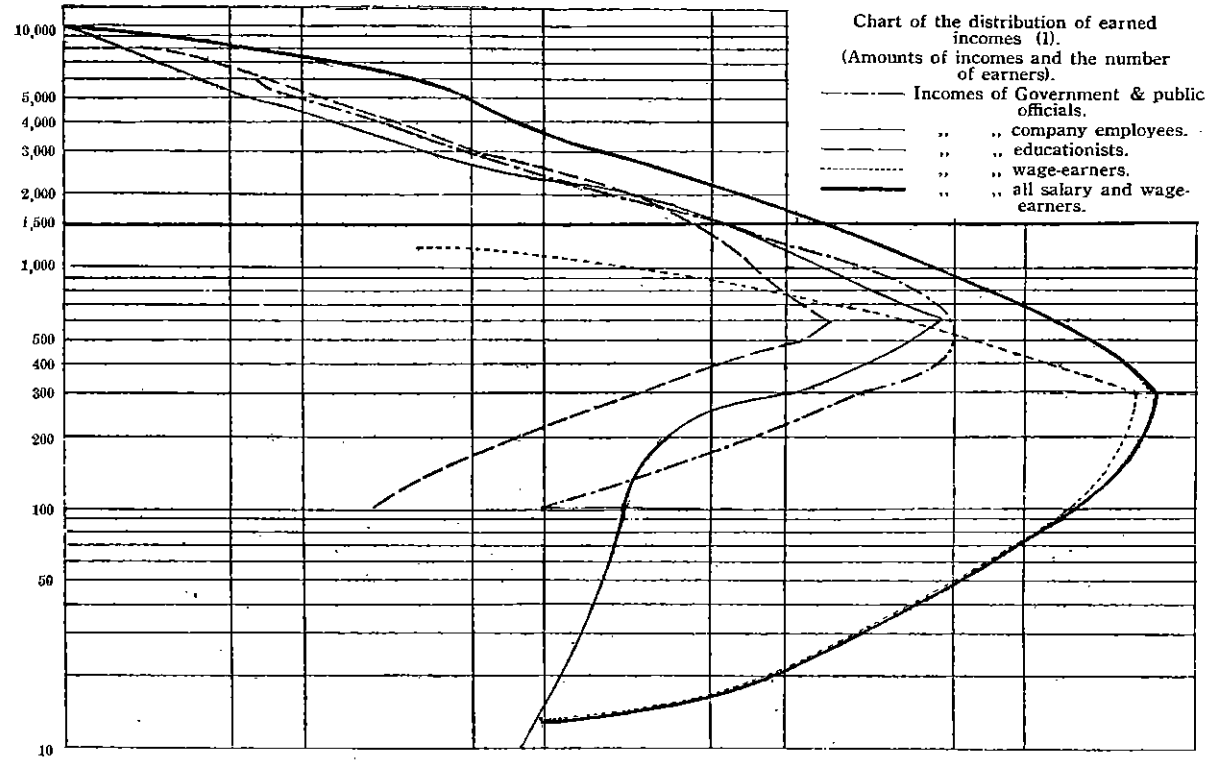Distribution of the earned incomes in the city of Kumamoto.

Incomes of	State of distribution. (In Yen)			Average income per head (in ¥)	Percentage of earners of less than ¥1,000 to the total number of earners.	Percentage of incomes of earners of less than ¥1,000 to the incomes of all earners.
	Biggest income.	Highest percentage part.	Smallest income.			
All earners	39,330	300–400	13	625	84	57
Government & public officials	10,762	500–600	122	903	71	50
Soldiers & sailors	7,923	900–1,000	150	1,554	39	19
Educationists	7,700	600–700	150	1,253	51	28
Company employes	39,336	600–700	50	966	70	44
Wage-earners	1,289	300–400	13	314	99	99

The above table shows that (a) in regard to the Government and public officials, their incomes vary from the lowst ¥122 to the highest ¥10,762, though the main range of distribution is from ¥200 to ¥650 (b) Concerning the soldiers and sailors, their incomes range from the lowest ¥150 to the highest ¥7,923, though they are, as in the case of the Government and public officials, mainly distributed within the range of from ¥200 to ¥650. (c) The incomes of the educationists range from ¥150 to ¥7,700, being mainly distributed within the range of from ¥300 to ¥650. The lowest income in this category is higher by ¥100 than that of the Government and public officials. (d) With regard to the incomes of the company employees, the range of their distribution is widest, namely, from ¥50 to ¥39,300. This is because company employees comprise persons with highly

S. SHIOMI

Graph No. 3.   Distribution of the total incomes
in the city of Kumamoto.

Number of
earners
(Logarithmic
scale)
↓

Incomes (Logarithmic scale)
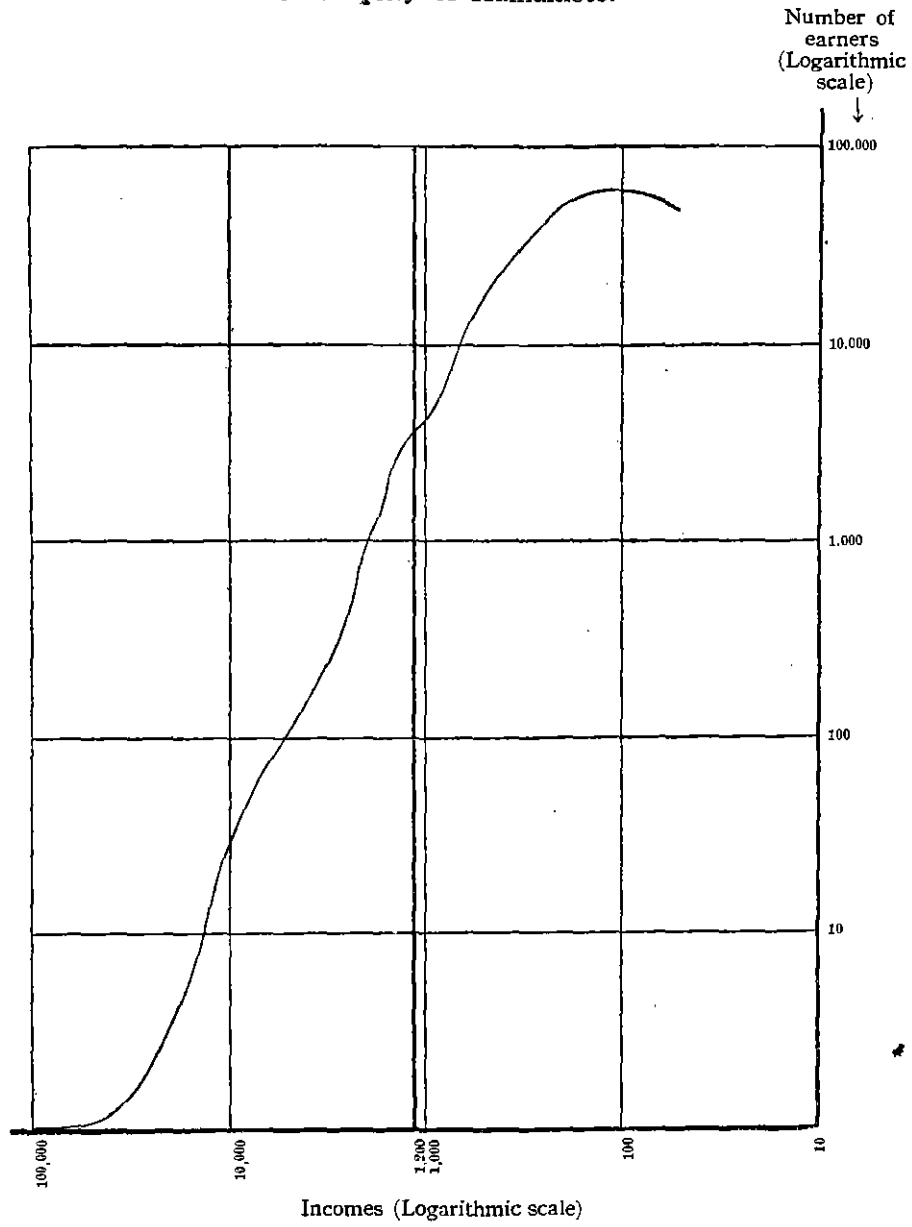
Graph No. 4. Distribution of the earned incomes of various kinds
in the city of Kumamoto (distribution chart).

Chart of the distribution of earned
incomes (1).
(Amounts of incomes and the number
of earners).
—·—·— Incomes of Government & public
officials.
——————— ,,   ,, company employees.
— — — ,,   ,, educationists.
·············· ,,   ,, wage-earners.
━━━━━ ,,   ,, all salary and wage-
earners.

Graph No. 5. Distribution of the earned incomes of various kinds
in the city of Kumamoto (accumulation chart).

Chart of the distribution of earned incomes (2).
(Incomes & the number of persons who get
incomes over designated grades).

———·——— Incomes of Government & public
officials.

————·———   „   „ solders and sailors.
——————   „   „ company employees.
——— ———   „   „ educationists.
....   „   „ wage-earners.
——————   „   „ all salary and wage-
earners.

10,000
5,000
4,000
3,000
2,000
1,500
1,000
500
400
300
200
100
50
10

1   5   10   50   100   500   1,000   5,000   10,000   50,000
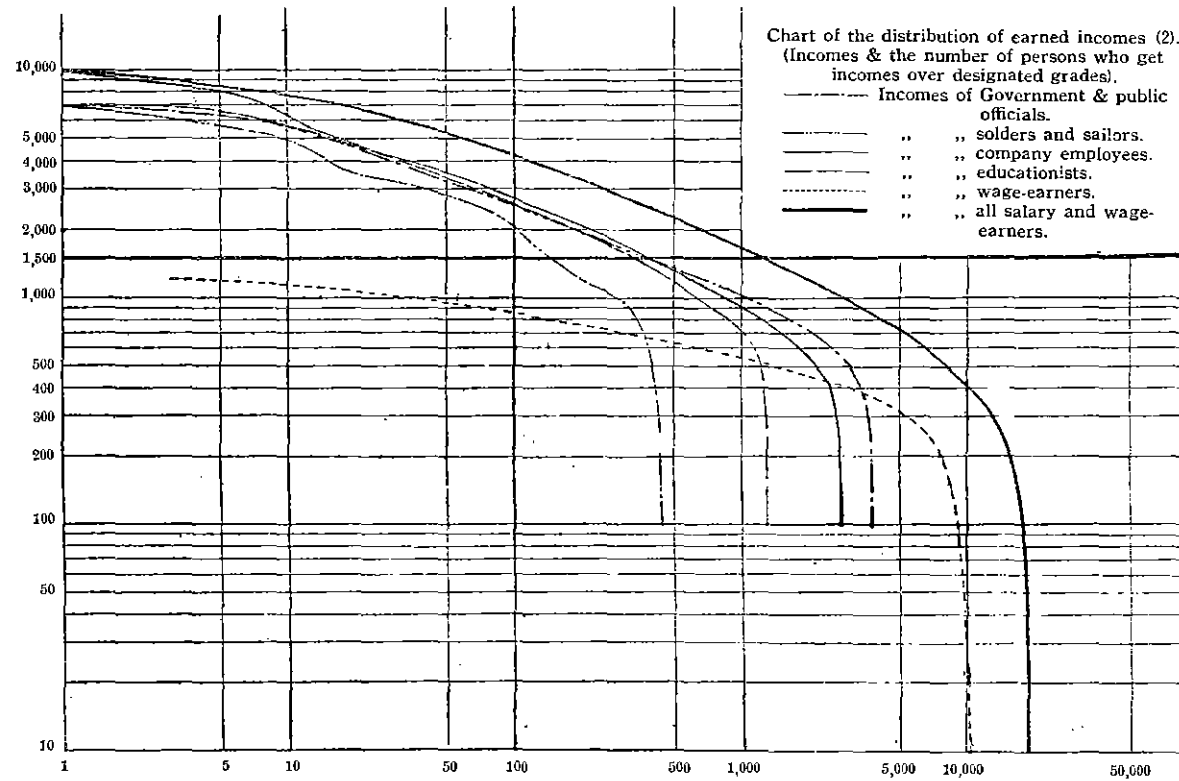
diversified incomes, from poorly-paid servants to senior employees who belong to the so-called managerial class. (e) So far as the incomes of manual workers are concerned, the biggest income is only ¥1,289, a fact which shows that the range of distribution is here more limited than is commonly imagined. The smallest income is shown by the fractional figure of ¥13.
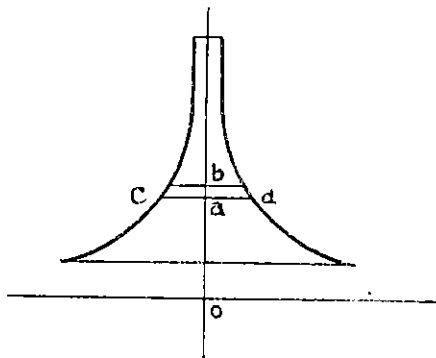
Graph No. 3 represents in a curve the form of the distribution of the total incomes, while Graph No. 4 and Graph No. 5 show the distribution of the earned incomes of various kinds and their accumulation state respectively. In these three Graphs illustrating the state of the distribution of the incomes, the amounts of income are placed on the vertical lines and the number of earners on the horizontal lines. For reasons of limited space, logarithmic diagrams have been adopted in all of these graphs. The scales of both the vertical and horizontal lines are logarithmic.

As to the shape of the lower part of the pyramidal curve of the distribution of the incomes, it is very compressed in the lowest part, but in a part a little higher, the compression is somewhat modified. Hitherto, it has generally been conceived that the curve of the distribution of incomes forms like Mount Fuji as Graph No. 6 shows, but this is an illusion, for which the use of the statistics of the C-class income tax, in which the exemption (untaxable) point is placed comparatively high, is responsible. In Graph No. 3, the exemption point is set at ¥1,200, and in Graph No. 4 at ¥1,500, so as to seen how the exemption point and the curve of the distribution of the incomes are related to each other. The reason why the

Graph No. 6.

exemption point was set at ¥1,500 in the curve in Graph
No. 4, which indicates the distribution of the earned in-
comes, is that on the earned incomes a 20 per cent. deduc-
tion is allowed in assessment so that a 1,500-yen income is
reckoned as a 1,200-yen income, which corresponds to the
sum at the exemption point. Either in Graph No. 3 or in
Graph No. 4 is observabie that the main body of the curve
of income distribution lies belew the line showing the ex-
emption point, the whole Graph looking like an iceberg.
The incomes of wage-earners even take the shape of flat
sheets buried in the ground. Their entire form lies far
below the exemption point.

Next, the characteristics of the distribution of the earned

Table

Comparison of the actual relative average difference η'

	First quartile of incomes (x_1).	Median number of incomes (x_2).	Third quartile of incomes (x_3).
(a) Total incomes	¥ 550	¥ 1,550	¥ 6,500
(b) Total earned incomes	450	850	1,550
(c) Incomes of Government & public officials	650	950	1,550
(d) Incomes of soldiers & sailors.	1,050	1,950	2,850
(e) Incomes of educationists	950	1,450	2,350
(f) Incomes of company employees	650	1,150	1,950
(g) Incomes of wage-earners	250	350	450

Whereas η' in regard to the C-class incomes of the city
of Kumamoto is 0.879588, that in respect of the incomes
subject to the household rate is 1.281509. There is, thus, a
wide difference between the two. Again, as ¥1,550 repre-
sents the median number of the incomes, the incomes
exceeding the exemption point of the C-class income tax
although the exemption point is ¥1,200, it will actually be
somcwhere in the neighbourhood of ¥1,500, when the

incomes have been made clear in Graph No. 5, in which the accumulation form of their curves is shown. The result does not support Pareto's contention that the curve of earned incomes is always concave. On the contrary, this Graph shows that it is in most cases convex.

Lastly, Simpson's actual relative average difference η' has been found true in regard to the total incomes and the various kinds of earned incomes, the result being shown in Table No. 8. I have taken the occasion to work out the quarter numbers for the various kinds of incomes, viz. x_1, x_2, and x_3, and also the numbers y_1, y_2, and y_3, which are needed for finding the actual relative average difference η'.

No. 8.

for all kinds of incomes in the city of Kumamoto.

Percentage of persons with incomes of less than x_1 (y_1).	Percentage of persons with incomes of less than x_2 (y_2).	Percentage of persons with incomes of less than x_3 (y_3).	η'
0.757390	0.937377	0.990053	1.281509
0.503936	0.796043	0.938160	0.786823
0.388547	0.681563	0.907412	0.515654
0.443662	0.753521	0.889671	0.613458
0.479725	0.726855	0.913542	0.675593
0.395482	0.766583	0.924704	0.604637
0.355670	0.598910	0.807819	0.284259

deductions on account of earned incomes, dependants and life insurance premiums are allowed for embody one half of the total incomes. With regard to the actual figures, the C-class incomes on which the C-class income tax is levied total ¥12,100,000, or about 60 per cent. of the incomes on which the household rate is assessed, totalling ¥18,850,000. That is to say, the example of Kumamoto shows that the C-class incomes constitute about one half of the total in-

comes. Now, as to the γ' for the earned incomes. That for the incomes of wage-earners is 0.284259 ; that for Government and public officials, 0.515654 ; that for company employees, 0.604637 ; that for soldiers and sailors, 0.613458 ; that for educationists, 0.675593 ; and that for all earners of incomes, 0.786823. Collating these facts, we can reach the following noteworthy conclusions :—

Firstly, of the total incomes in the city of Kumamoto, only about half the amount falls under the category of the C-class incomes, and, moreover, the distribution of the whole incomes is far more uneven than the distribution of the C-class incomes.

Secondly, in the city of Kumamoto, the distribution of the incomes of the wage-earners shows the largest measure of evenness, while the distribution of the incomes of the Government and public officials, company employees, soldiers and sailors, and educationists is somewhat uneven, the greatest unevenness being shown in the distribution of property incomes. In other words, the incomes from pro· perty are less evenly distributed than the earned incomes, of which the distribution of the incomes from salaries is less even than that of the incomes from wages.

It may be a most question whether the state of the distribution of incomes in the city of Kumamoto can be taken as truthfully reflecting the state of the distribution of incomes in all other cities and districts in the country, but it is nevertheless noteworthy that the state of the distribu- tion of incomes revealed by the study of the data supplied by the household rate statistics is found to possess the above-mentioned remarkable characteristics.

CHAPTER 5.   ADDENDUM

The following table shows the national incomes for 1925, as made priblic by the Statistical Bureau of the Cabinet :—[14]

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14) K. Môri: The Estimate of the National Wealth & Incomes of Japan Proper.

		Yen
Total		13,382,323,000
I. State and public income		425,385,000
From State undertakings and State properties		355,014,000
From forests		42,972,000
Rents and hire on State properties		816,000
Profits of Naval arsenals		1,998,000
Profits of the State iron foundry . . . . ❦		1,358,000
Profits of State railways		143,259,000
Profits of monopolies		153,029,000
Profits of the Printing Bureau		1,911,000
Dividends of banks and companies		9,671,000
Income of public bodies		70,371,000
Receipts from electric undertakings		51,338,000
Receipts from gas works		233,000
Receipts of industrial associations		18,022,000
Receipts of central treasuries of industrial associa- tions		778,000
II. Private income		12,956,938,000
Taxed income		5,104,221,000
Class I—Reserved income of corporations		320,554,000
Class II—Interests on bonds, debentures, &c.		555,392,000
Class III—Other income of individuals		3,455,108,000
Untaxed income		7,852,717,000
Income below the income tax exemption limit . . .		6,960,194,000
Income from agriculture		1,658,540,000
,, ,, aquatic products industry . . . . : .		233,076,000
,, ,, mining		224,648,000
,, ,, manufacturing industry		1,852,390,000
,, ,, commerce		1,301,478,000
,, ,, transport and communications . . .		482,016,000
,, ,, public service and professional oc- cupations		571,994,000
,, ,, domestic service		8,000,000
Income of servants in households		199,728,000
Income from other occupations		221,446,000
Income of those having only subsidiary jobs . . .		29,800,000
Dividends		190,349,000
Other untaxed income		892,523,000
Interests on postal savings, national bonds, &c . .		119,317,000
Annuities and pensions of untaxable kind		66,546,000
Income under special exemption		2,541,000
Remittances from nationals abroad		25,453,000
Other untaxed income*		678,666,000

Note: * This category includes the income entirely evading the income
tax, assumed to be 10 per cent of the total of income below
the exemption limit; and other items of income than above
specified whose totals are capable of rough estimate.

In this investigation, " the amount of taxes evaded " and
" the untaxed incomes " deserve special attention. It is
especially necessary, though very difficult, to calculate the
incomes below the exemption limit. It is regrettable that
no authentic expositions are available which may help us
to make an accurate estimate of these incomes, but it seems
that the researches made by Mr. K. Mori and Mr. T. Naka-
gawa in this connection are valuable.[15] Mr. Nakagawa's
study is a valuable one, in which the results of researches
made by Bowley, Helfferich, and Stamp are utilised. No
other scholar has, indeed, made a study of this kind in this
country. It has nevertheless this drawback, that its results
are largely conjectural. The study of the subject of tax
evasion is in itself a matter of great interest and significance,
and in this field of study A. Victor Tranter's book, " Evasion
of Taxation " is very suggestive. As the author makes an
extensive use of the literature bearing on the estimates and
studies of the amounts of taxes dodged in many countries,
his book is, no doubt, very useful for the study of this
subject.

The scope of the present study is limited to the city of
Kumamoto, but as it is based on the household rate of that
city, it covers all kinds of incomes. By extending the
statistical investigation of this kind to all districts of the
country, it is to be hoped that the total amount of incomes
below the exemption point and other untaxed incomes as
well as the state of their distribution can be ascertained.
By collating the figures thus secured and those of the
taxable incomes, we shall be able to acquire an accurate
knowledge of the total amount of the people's incomes and
the state of their distribution.

I have now made clear the state of the distribution of
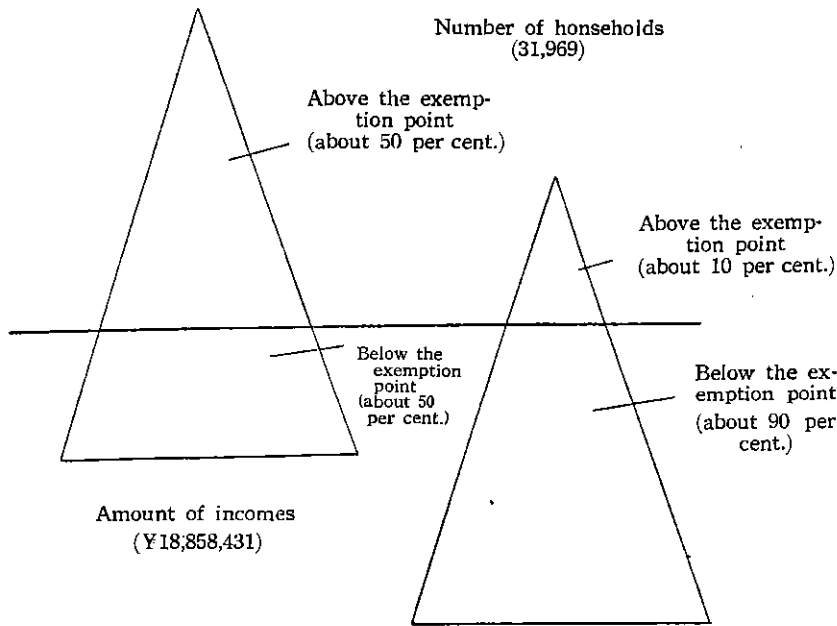the incomes in the city of Kumamoto on the basis of the

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15) K. Môri: The Estimate of the National Wealth and Incomes of
Japan Proper.

　　　Tomonaga Nakagawa: A Study of Wages and Incomes (the
Keizai Kenkyu Vol. 5, No. 3).

incomes on which the household rate is assessed in that city. The inquiry has revealed the fact that the C-class incomes constitute only about one half of the total amount of incomes and that the households which are paying the C-class income tax form only about 10 per cent. of the total number of the households in the city. The discovery of the fact that " the amount of the incomes accruing to the people whose households represent 10 per cent. of the total number of households " is fairly equivalent to " the amount of the incomes of the people representing the remaining 90 per cent. of the total households " supplies, no doubt, a very valuable datum.

In order to give a more vivid illustration of how the incomes and the number of households are divided by the exemption point, I have prepared Graph No. 7.

Graph No. 7. Comparison of the incomes of the citizens of Kumamoto, as divided by the exemption point in the C-class income tax.

Number of honseholds
(31,969)

Above the exemp-
tion point
(about 50 per cent.)

Above the exemp·
tion point
(about 10 per cent.)

Below the
exemption
point
(about 50
per cent.)

Below the ex-
emption point
(about 90 per
cent.)

Amount of incomes
(¥18;858,431)

SABURO SHIOMI